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**ADDENDUM TO THE REPORT  
OF THE  
  
COMMITTEE ON LAND DISPOSAL**

ILLINOIS GEOLOGICAL  
SURVEY LIBRARY  
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**Illinois Hazardous Waste Task Force  
FINAL CONFERENCE  
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Springfield**





COMMITTEE ON LAND DISPOSAL  
AMENDED FINDINGS AND RECOMMENDATIONS

Need for Land Disposal

The Land Disposal Committee finds that there is a current need for land disposal of hazardous waste. Even after the application of other technologies to reduce volume or degree of hazard, Illinois industry depends on land disposal for the safe isolation of hazardous residues.

The committee finds that it will be difficult for new hazardous waste disposal facilities to be sited in Illinois in the foreseeable future. This situation will likely continue until land disposal techniques and government regulation of land disposal gain public confidence.

The committee also finds that the reliance on land disposal for hazardous waste has decreased in recent years and that there are trends toward increased use of incineration and treatment of hazardous waste.

The committee recommends that:

- the limited present landfill capacity should be carefully conserved to be available for those hazardous wastes which cannot practically be destroyed or treated and for residues from treatment technologies.

Proper Landfill Disposal

The committee finds that it is cheaper to dispose/treat hazardous waste properly the first time and avoid costly cleanup efforts later. Proper land disposal should be viewed as the last phase of handling hazardous waste.

The Land Disposal Committee finds that proper disposal in an existing landfill has the following specific elements:

- volume reduction techniques should be used to extend the life of hazardous waste landfills;
- pretreatment of hazardous waste should be used to reduce the degree of hazard;
- liquids in bulk and containers should not be disposed in landfills; and
- hazardous wastes should be packaged and stored--for example, in rectangularly shaped containers--to provide for more stable packing of waste and to reduce post-closure settling.

The committee finds that there are advantages to classifying hazardous waste and matching classes of waste with the most compatible disposal technology.

The committee finds that current land disposal practice may be leading to the "bathtub" effect. The bathtub effect results in landfills that fill with water because of defects that develop in landfill caps. The defects are caused by settling of wastes and premature construction of the cap (before settling has occurred).



The committee recommends that:

- the proper disposal of hazardous waste in landfills includes requirements for using volume reduction techniques and pretreatment, and requirements that prohibit the disposal of bulk and containerized liquids;
- a classification scheme for hazardous waste be promulgated by the Pollution Control Board on the basis of studies by the Department of Energy and Natural Resources;
- the Illinois Environmental Protection Agency use the permit process to limit the waste that can be accepted by landfills to classes of waste compatible with that landfill;
- the state encourage the use of suitable packaging and storage of hazardous waste to provide more stable packing of waste and to reduce post-closure settling; and
- the closure period be extended to allow for subsidence of waste before the final cover is put in place.

#### Landfill Leachate

The committee finds that, while probably only a small percentage of groundwater pollution could be attributed to landfill leachate, the potential for pollution requiring remedial cleanup is significant.

The committee finds that there is leachate movement at all hazardous waste landfills. The rate may be one or two feet per decade or it might be much faster. There are no guidelines to help determine at what rate leachate movement becomes a threat to surface and groundwater, what constituents of leachate at what levels present an unacceptable risk to society, and what level constitutes contamination.

The committee recommends that:

- the Department of Energy and Natural Resources study appropriate technologies for controlling landfill leachate, for example, multiple layered liners, leachate collection, treatment, etc.

#### Siting and Hydrogeology

The Land Disposal Committee finds that siting is probably the most important factor in designing a hazardous waste land disposal facility. The selection of a site must be based on a thorough site evaluation by geologists and the site evaluation must be used by the engineers designing the facility.



The committee recommends that:

- locational standards for hazardous waste disposal facilities be incorporated by the Pollution Control Board into land disposal regulations;
- locational standards include climatic conditions, hydrogeologic and geotechnical considerations, population density, urbanization factors, and other socioeconomic factors;
- land disposal facilities should not be located in environmentally sensitive areas such as floodplains, wetlands, archaeological and historic sites, and habitats of endangered species;
- land disposal facilities should be buffered from surrounding occupied structures and be at least one-half mile from the nearest resident; and
- the Department of Energy and Natural Resources be required by law to conduct an independent verification of the hydrogeological assessment for all proposed hazardous waste land disposal sites as the first step in the permitting process.

#### Surface Impoundments

The committee finds that hazardous waste-containing surface impoundments represent a potentially significant threat to groundwater. Surface impoundments provide a reasonable onsite method of hazardous waste disposal only if located, constructed, and monitored so as to eliminate contamination of usable groundwater supplies.

The committee recommends that:

- the Illinois Environmental Protection Agency conduct a detailed investigation to determine to what extent surface impoundments are used for hazardous waste in Illinois; and
- the Department of Energy and Natural Resources study appropriate technologies--for example, multiple layered liners and leachate collection systems--for controlling leachate at all hazardous waste-containing surface impoundments.

#### Injection Wells

The committee finds that deep injection wells that are carefully matched to the geological strata into which the wastes are injected are a useful disposal technique for certain hazardous wastes.



The committee recommends that:

- triple casings be required on all deep injection wells; and
- the Department of Energy and Natural Resources examine the compatibility of injected waste with the strata into which the waste is injected and the Pollution Control Board consider restrictions on injected waste where appropriate.

#### Onsite Facilities

The committee finds onsite hazardous waste generation, treatment, and disposal techniques appear to be virtually unknown and unmonitored.

The committee recommends that:

- investigations to determine these volumes and treatment and disposal techniques onsite continue as specified under RCRA.

#### Research

The Land Disposal Committee finds that land disposal technologies are becoming more sophisticated and that there are emerging land disposal technologies that are not yet being used in the United States.

The committee recommends that:

- Illinois increase research support for the Department of Energy and Natural Resources to review available technologies for waste disposal, identify new disposal technologies for use in Illinois, and encourage research and long-term development of land disposal technology.

#### Incentives and Fees

The committee finds that land disposal of hazardous waste is among the more economical disposal alternatives and that imposition of fees is one way to encourage the development of alternative disposal strategies.

The committee recommends that:

- the state continue to charge fees for the disposal of hazardous waste;
- the fees be set at an appropriate level to encourage waste generators to use alternative treatment, source reduction, recycling, and disposal techniques where available;
- the fees be graduated according to the class of the waste so that wastes that are more difficult to dispose (or perhaps more hazardous) are charged relatively higher fees; and

- a larger portion of collected fees go into research on hazardous waste management and alternative technologies.

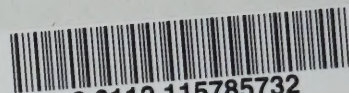
#### Administration and Enforcement

The Land Disposal Committee finds that environmental monitoring at hazardous waste land disposal facilities is inadequate. There are not sufficient resources available for the Illinois Environmental Protection Agency to provide technical assistance and to conduct inspection at hazardous waste land disposal facilities. This leads to blind spots in the state's knowledge about hazardous waste disposal and in the areas of responsibility of state and federal agencies and may allow hazardous situations to develop unnoticed. The committee notes with interest the apparent disproportionate resources channeled by the Agency into legal work rather than technical assistance and inspection.

The committee recommends that:

- the Illinois Environmental Protection Agency increase technical assistance and hazardous waste enforcement activities, particularly in expanding the scope of monitoring at hazardous waste land disposal and onsite storage facilities;
- the partnership with local government should be expanded to allow ready access in county seats to monitoring and enforcement information concerning hazardous waste sites;
- the Illinois Environmental Protection Agency provide as a service the semiannual testing of drinking water supplies for all persons living within 5 miles of any hazardous waste land disposal facility and wishing to take advantage of the service;
- the Illinois Environmental Protection Agency investigate ways of including small industry generators in the inventory and monitoring system for hazardous waste; and
- records of hazardous waste landfill operations be required to be kept for at least as long as the owner's period of responsibility.





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